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CLAIMS:

1. A method of transforming a population of quiescent cells with a nucleic acid encoding a polypeptide for treating a disease or disorder, the method comprising:

exposing the cells to (a) a retroviral packaging cell line expressing nucleic acid encoding a growth factor, or (b) retroviral particles expressing nucleic acid encoding the growth factor as a fusion with a viral envelope protein, so that the growth factor is displayed on the surface of the cell line or the viral particles, the cell line or retroviral particles carrying a vector comprising the nucleic acid encoding the polypeptide for treating the disease or disorder,

wherein the surface bound growth factor induces the cells to divide, so that the nucleic acid encoding the polypeptide for treating a disease or disorder can incorporate into the genome of the cells.

2. The method of claim 1 wherein the quiescent cells are haematopoeitic stem cells.

3. The method of claim 1 or claim 2 wherein the growth factor is stem cell factor (SCF) or FLT3 ligand.

4. The method of any one of claims 1 to 3 wherein the cell line or retroviral particles display multiple growth factors.

5. The method of any one of the preceding claims wherein the growth factor is expressed as a fusion with a viral envelope protein and is attached to the N-terminus of a retroviral envelope protein.

6. The method of any one of the preceding claims wherein the growth factor is expressed as a fusion with a viral envelope protein and is fused to the envelope

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protein via a cleavable linker.

7. The method of any one of the preceding claims wherein the envelope protein is viral envelope SU protein.

8. The method of any one of the preceding claims wherein the retroviral packaging cell line further expresses nucleic acid encoding a receptor to target the cells to the bone marrow and/or an immunosuppressive factor so that the receptor and/or immunosuppressive factor are displayed on the cell surface.

9. A population of cells produced by the method of any one of claims 1 to 8 having the nucleic acid encoding a polypeptide for treating a disease or disorder stably incorporated into their genome.

10. A pharmaceutical composition comprising the cells of claim 9, in combination with a pharmaceutically acceptable carrier.

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11. Use of the cells of claim 9 in the preparation of a medicament for the treatment of a disease or disorder in a patient that responds to the polypeptide.

12. The use of claim 11 wherein the cells are administered by implantation into the patient.

13. A retroviral packaging cell line transformed with nucleic acid encoding a polypeptide for treating a disease or disorder, the cell line is transformed with (a) nucleic acid encoding a growth factor so that the growth factor is displayed on the surface of the cell line, and (b) a vector comprising the nucleic acid encoding the polypeptide for treating the disease or disorder

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wherein the cell line is capable of inducing quiescent cells to divide, so that the nucleic acid encoding the polypeptide for treating a disease or disorder can incorporate into the genome of the quiescent cells.

14. The retroviral packaging cell line of claim 13 wherein the quiescent cells are haematopoeitic stem cells.

15. The retroviral packaging cell line of claim 13 or claim 14 wherein the growth factor is stem cell factor (SCF) or FLT3 ligand.

16. The retroviral packaging cell line of any one of claims 13 to 16 wherein the cell line displays multiple growth factors.

17. The retroviral packaging cell line of any one of claims 13 to 16 wherein the cell line is a lentiviral packaging cell line.

18. The retroviral packaging cell line of any one of the claims 13 to 17, further expressing nucleic acid encoding a receptor to target the cells to the bone marrow and/or an immunosuppressive factor so that the receptor and/or immunosuppressive factor are displayed on the cell surface.

19. A pharmaceutical composition comprising the retroviral packaging cell line of any one of claims 13 to 18, in combination with a pharmaceutically acceptable carrier.

20. Use of the retroviral packaging cell line of claims 13 to 18 in the preparation of a medicament for treating a disease or disorder that responds to the polypeptide.

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21. The use of claim 20 wherein the retroviral packaging cell line is administered by implantation into a patient's bone marrow or by infusion into a patient's blood.

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